Applicant: Donald R. Mapes, et al. Attorney's Docket No.: 14920.0015 C1

Serial No.: 10/657,755

Filed: September 9, 2003

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## **Amendments to the claims**

This listing of claims will replace all prior versions and listings of the claims.

# **Listing of Claims:**

1.-13. (Canceled).

## 14. (Currently amended) A photovoltaic array comprising:

a plurality of elongated rails for being mounted on a support surface projecting upwardly therefrom and extending in a spaced and parallel relationship to each other;

each rail having an extruded resin construction including a lower base and an upper cap
that cooperate to define a pair of grooves opening in opposite directions from each other; and
rectangular photovoltaic modules having edges that are received by the grooves of the
rails so as to be mounted above the support surface in a spaced relationship from the support
surface

A photovoltaic array as in claim 1 wherein the lower base and upper cap of each rail are extruded as separate pieces and secured to each other to define the oppositely opening pair of grooves, each base including a lower end for mounting on the support surface, a stem that projects upwardly from the lower end, an upper extremity of a T shape that defines an upwardly opening slot extending along the elongated length of the elongated rail and the upper extremity of the lower base including downwardly extending flanges for securing flashing; and each upper cap having a T shape including a stem that projects downwardly and is received by the slot in the T-shaped upper extremity of the lower base, and each upper cap having an upper cross bar that extends in opposite directions from the stem thereof to cooperate with the T-shaped upper extremity of the lower base in defining the pair of grooves that open in opposite directions from each other to receive the edges of the photovoltaic modules that are mounted by the rails on the support surface.

#### 15. (Canceled).

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16. (**Original**) A photovoltaic array as in claim 14 further including fasteners for securing the upper cap to the lower base.

- 17. (**Currently amended**) A photovoltaic array as in claim 15 16 wherein the upper cap includes an elongated extruded formation that facilitates centering alignment of drilled holes for receiving the fasteners.
- 18. (Currently amended) A photovoltaic array as in claim 10 14 wherein the lower bases and upper caps of the elongated rails are extruded from a first resin and wherein the grooves of the rails include pads of a second material that is softer than the first resin to accommodate for thickness variations in the photovoltaic module edges received by the grooves.
- 19. (**Original**) A photovoltaic array as in claim 14 wherein the lower bases and upper caps of the elongated rails are extruded from a first resin and wherein the grooves of the rails include pads of a second material that is softer than the first resin to accommodate for thickness variations in the photovoltaic module edges received by the grooves.
- 20. (**Original**) A photovoltaic array as in claim 19 wherein the lower base is extruded entirely from the first resin and wherein the upper cap is coextruded from the first resin and a second resin which constitutes the second material and provides the pads which are located on the upper cross bar within the grooves.
- 21. (**Currently amended**) A photovoltaic array as in claim 10 14 wherein the upwardly opening slot of the lower base and the downwardly projecting stem of the upper cap have connection formations for providing securement of the upper cap to the lower base.

#### 22. (Canceled).

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23. (**Original**) A photovoltaic array as in claim 14 further including cross members that are supported by and extend between the T-shaped upper extremities of the lower bases of the rails within openings between the photovoltaic modules to space the rails from each other.

- 24. (**Currently amended**) A photovoltaic array as in claim 22 23 wherein the cross members have elongated shapes extruded from resin with an upwardly opening shape, and electrical wiring received by the upwardly opening cross members.
- 25. (Currently amended) A photovoltaic array as in claim  $\pm 14$  wherein the support surface is a roof having a membrane on which the rails are mounted.
- 26. (**Original**) A roof photovoltaic array as in claim 25 further including connections that secure the lower bases of the rails to the membrane on the roof.
- 27. (**Original**) A roof photovoltaic array as in claim 26 wherein the connections include elongated connector strips, the lower bases of the rails having openings through which the connector strips extend, and the connector strips having ends secured to the membrane on the roof.

#### 28-43. (Canceled)

- 44. (New) A photovoltaic array as in claim 14, wherein the photovoltaic modules are arranged in pairs with the modules of each pair abutting each other, and each pair of photovoltaic modules being spaced along the elongated lengths of the rails from each adjacent pair of modules to provide openings therebetween.
- 45. (New) A photovoltaic array as in claim 14, wherein the photovoltaic modules have elongated rectangular shapes that have lengths about twice as long as widths thereof, and each pair of photovoltaic modules having elongated edges along lengths thereof abutted with each other so each pair of modules has a generally square shape.

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46. (New) A photovoltaic array as in claim 23 wherein the cross members are located within openings between the photovoltaic modules.

- 47. (New) A photovoltaic array as in claim 23 wherein the cross members have upwardly opening shapes that receive the electrical wiring.
- 48. (New) A photovoltaic array as in claim 47 wherein the cross members have a lower floor and a pair of sides that extend upwardly from the lower floor in a converging shape toward each other and have upper edges that are spaced from each other.
- 49. (New) A photovoltaic array as in claim 14 wherein the upper extremity of the lower base of each rail has a pair of upwardly projecting stops respectively located on opposite sides of the slot to position the modules horizontally with respect to the rails.
- 50. (New) A photovoltaic array as in claim 14 wherein the rails have a lower flange of the lower base provided with a greater lateral width along the elongated length thereof than the T-shaped upper extremity of the lower base and than the upper cross bar of the upper cap.
- 51. (New) A photovoltaic array as in claim 14 wherein the stem of the lower base has scallops for reducing the resin utilized.